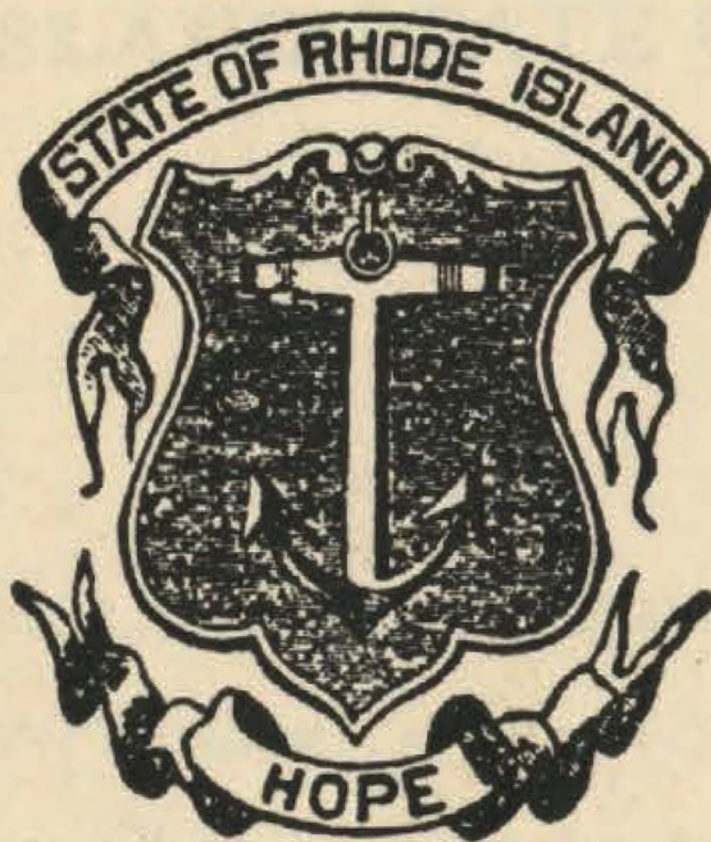


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FOR FEBRUARY, 1923

REPORT OF THE BOARD OF MANAGERS



KINGSTON, R. I.

1923

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REPORT
RHODE ISLAND STATE COLLEGE

Corporation

HON. WALTER E. RANGER, *Pres.*, Com. of Education, *ex-officio*....Providence
HON. ZENAS W. BLISS, *Vice-President*.....Providence Co., Providence
HON. ROBERT S. BURLINGAME, *Clerk and Treasurer*....Newport Co., Newport
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HON. CHARLES ESTES.....Bristol Co., Warren
HON. ROWLAND HAZARD.....Washington Co., Peace Dale
HON. PHILIP A. MONEY, Member of State Board of Agriculture.....Exeter

REPORT

*To His Excellency William S. Flynn, Governor, and the Honorable
General Assembly of the State of Rhode Island and Providence
Plantations, at its January Session, 1923:*

I have the honor to submit herewith the Thirty-fifth Annual Report of the Board of Managers of Rhode Island State College, as required by law.

WALTER E. RANGER,
President, Board of Managers.

REPORT OF THE PRESIDENT OF THE COLLEGE

To the Board of Managers, Rhode Island State College:

GENTLEMEN: I have the honor to submit as my report for the year 1922 the following:

The Work of the Year.

Outside of the regular routine procedure, the thought and effort of our faculty has been directed toward the strengthening of the spirit of earnestness among our students. There is no question that during the last four years the general tone of scholarship in our schools has been lowered, the schools sharing in the general riot of eagerness for the things that pertain to "the lust of the flesh, the lust of the eye and the pride of life" that has characterized our people in the days since 1918. While, perhaps, not openly avowed, the Horacian philosophy of "Carpe diem", or the spirit of the Ancreontic litanies to pleasure have been far more prevailingly notable in the life of the street and sometimes even of the home than has the fine steadiness of the same Horace's "sapere aude", or the noble idealism of Plato's doctrine of the good and the beautiful as the saving essence of life. Without going back to either Greek or Roman for our inspiration, we have suffered in our practical life and action a startling recrudescence of hedonistic philosophy. Work is something to be avoided, or if not avoided, to be listlessly endured for the sake of the hours of more or less sensuous pleasure that the work makes possible. The plane of our thought is lowered. Life has become, not a thing of high and serious moment involving problems of tremendous import to both the individual and the race, but a mere game which, while it does not involve the effort utterly to destroy the other fellow, yet has zest and meaning only as we are able through luck or cunning to win over him.

It would be strange, indeed, if the young life inevitably caught up in this strong current of pleasure-worship among their elders

should not bring into the schools during the last four years a certain intellectual softness, a shallow sense of relative values, a crude disdain of social conventions, an absorption in trivialities, a lack of mental stamina and of the will to solid achievement. Yet inevitably when measured by familiar standards of requirement long accepted as just and fair, the condition of mental malnutrition or unsymmetrical development revealed has been rather startling.

Let me hasten to say just here that I am not out of sympathy with the natural joyousness of youth, nor with pleasure as a natural, integral, necessary part of life. I do not mean, either, to join in the angry denunciations of my fellow men now characteristic of those who having confidently prophesied "a new heaven and a new earth" are now revealing their own very human temperament by railing against the American people for not proving equal to the miraculous regeneration through the sacrament of war which they, in the face of all history, so unequivocally promised.

It is, however, important frankly to recognize and to the best of our ability to diagnose the situation we face, and, the diagnosis made, to use such remedies as are indicated.

Both society and the school are suffering from a revolt against discipline. The old severe discipline of the puritan religion has lost its force among us. The harsh physical discipline of pioneer conditions has given way to the widely diffused comparative ease and well-being of an age and a nation richer in natural resources actually available than any the sun has ever before shone on. The doctrines of democracy have banished from among us the fear of political authority and have made odious the idea of a superior. The common man has learned that by organized mass-action he can defy the richest and most powerful of any rank. Up to the time of the War the process of release from discipline had gone quietly and gradually; but then came the sudden imposition of a discipline on both young and old that was harsh, imperious, all-pervasive, demanding and imposing the very extreme of self-abnegation, and running directly counter to all previous currents both of physical habit and mental bias. This continued for a brief period, and then as suddenly as it was imposed just so suddenly was it removed. Naturally, the old currents of radicalism, self-assertion, pleasure-seeking, dammed up

for the time, rushed forward with redoubled violence, sweeping away whatever of conservatism may have survived and asserting its freedom in graceless forms of art, music, and the dance, in baldness of speech and manners, in open defiance of essential social conventions, and in repudiation of the tame old virtues of industry, earnestness and self-restraint.

Let it not be imagined that all this indicates any decline in natural power or capability, in innate nobility of spirit or in capacity for the fine and generous idealism of previous generations. I stand in humility and reverence before the manhood and womanhood of our youth as it met the supreme test of the nation's call in 1917-18. In bodily prowess, in keenness of intelligence, in resourcefulness, in courage and self-sacrifice it measured up to the highest achievements of any clime or age. There is here no question of decadence or degeneracy. They are *capable* of the highest that man can reach. The question is as to what they will *will* to reach, whether it shall be the highest or something lower. An undisciplined spirit may be a magnificently capable spirit, but for lack of discipline it may fail miserably, and it will in any case surely not realize its highest possibilities.

With this diagnosis, what shall we apply as remedial measures? This is the question that has possessed our thoughts in the reconstruction period since the war, and especially has been the subject of discussion in the year just closed. It cannot be said that we have arrived at any very startling conclusions—not much more strange than the measures of the ancient prophet who insisted that for those who are to be taught knowledge and made to understand doctrine, “precept must be upon precept, precept upon precept, line upon line, line upon line; here a little and there a little.” We have tried with patient insistence both in word and deed to inculcate a philosophy of life that will induce self-discipline. The revolt, if it be merely against external authority, in order to make way for self-direction toward right action, is essentially the ideal of American democracy. If the will can be refined and tempered so as of itself to determine and follow a true course, then indeed the highest and finest form of discipline has been attained.

There is one kind of authority, neither personal, political, nor social, against which even the most radical among us has not found it possible to revolt, and that is the impersonal, inexorable logic of cause and effect. If we can make it perfectly clear that the results arising in any given case follow inevitably from a well-defined set of causes and that these results are not a punishment but a consequence, we have gone very far toward finding an antidote for the spirit of revolt and have also secured an instrument for revising and converting the whole unconscious or semi-conscious hedonistic philosophy of the student. The whole daily life of the school may become a laboratory for working out the logic of events, and so be made to develop a higher and larger meaning for life itself.

During the year, realizing all that has been said in the foregoing, we have directed our efforts toward meeting the difficulties presented. That we have not succeeded as largely as we could wish is a foregone conclusion. Indeed, it has been a matter of much concern to us that during the scholastic year 1921-22 we found ourselves constrained to drop over ten per cent of our undergraduate students for persistent failure to take advantage of the opportunities for serious work afforded them. It is a consolation to be able to record that so far in the current year (1922-23) the percentage of failures has been far smaller.

Enlargement of the Scope of the Work.

In the Engineering Department a distinctly new line of work has been undertaken in the establishment of Extension Classes here and there in the State for the purpose of carrying instruction of a helpful and practical nature to men actually engaged in industry. Through this department, also, the College is making an effort to aid in problems of industrial efficiency and management.

For our students, also, new courses in administration and finance are being added to the work in Engineering already given. The engineer of the present day has to deal, not only with the properties of steel or electricity, but with human psychology, with efficiency of administration and management, with relative costs and with methods of finance. The profession of the engineer, beginning with demands narrowly technical and concerned with *things* merely, is now requir-

ing of him an acquaintance with human capability and achievement and a sweep of vision over the whole round of the actual and potential in our universe that are not second to the breadth of resource and training required in any other profession. It is quite significant that administrative positions, from that of College president or the chief of Red Cross relief efforts to the responsible head of great railroad systems or industrial organizations, are being filled from the ranks of the Engineers.

Under a grant of funds from the State and in connection with the investigative work of the Experiment Station, a line of effort to examine the machinery of food-distribution in our State has been undertaken, and a preliminary report, published as a bulletin of the Experiment Station, is now in print. This new effort has very definite connection with the new work of the engineering school, in that they both are responsive to a very definite present consciousness in all divisions of basal economic production, of a vital relation with the whole mechanism of economic exchange and distribution. Agriculture, industry, and commerce are vitally interdependent, and that interdependence must be recognized in the college training leading to the profession of the engineer or the farmer. For us, also, it seems to me to foreshadow, the development of a school of training for commerce in close sympathy and connection with the schools of Agriculture and Engineering.

Attendance.

The usual tables of attendance for the current college year (1922-23) are given below. The total is 391 as compared with 401 for the year which closed in June, 1922. The resources of the College are being utilized practically to the limit with four hundred students, and the number can be increased only by the increase of the number of teachers. It might as well be recognized that the number has been kept down in accordance with our resources, both by removing unresponsive student material in the previous scholastic year as already mentioned in the foregoing part of this report, and by more rigidly testing applicants for the current year.

We do not believe that the State desires or should desire to limit the opportunities it gives for preparation for the world's work in the

State; and this, not for the sake of the individual, but for the safety and progress of the State itself. Just as it is well recognized that the safety of the State requires the elimination of illiteracy among its citizenship, so it is essential that the State assure for itself an adequate supply of young persons properly equipped and adequately trained to carry on its agriculture, industry, and commerce under the ever-increasing complications of our economic and social organization.

TABLES SHOWING ANALYSIS OF ATTENDANCE.

TABLE NO. 1.

Showing Attendance by Classes During the Years From 1919-23

CLASSES.	1918-19	1919-20	1920-21	1921-22	1922-23
Graduate Students	2	4	4	4	4
Seniors	32	41	34	59	54
Juniors	43	53	69	75	67
Sophomores	48	88	98	93	90
Freshmen	125	143	134	138	150
Irregular	5	3	11	15	14
Total, college courses.....	255	332	350	384	379
Two-Year courses .....	.....	10	6	17	12
Student Army Training Corps...	268	.....	.....	.....	.....
Total	523	342	356	401	391
Names repeated	121	.....	.....	.....	.....
Total	402	.....	.....	.....	.....
Two Mechanics Units	515	.....	.....	.....	.....
Total	917	342	356	401	391

TABLE No. 2.

Showing Number of Men and Women, of New and Previous Matriculates,
and Number in the Several Courses by Classes for
Collegiate Year 1922-23.

CLASS.	Sex.		Date of Matriculation.	
	Men.	Women.	Previous to 1922.	1922.
Graduates	4	0	1	3
Seniors	40	14	54	0
Juniors	53	14	66	1
Sophomores	74	16	84	6
Freshmen	134	26	8	142
Irregular	8	6	1	13
Total College	303	76	214	165
Two-year	12	0	8	4
Grand Total	315	76	222	169

CLASS.	Engineering.						Appl. Sci.	Home Ec.	Educ.	Total
	Agric.	Civil	Ch'm.	Elec.	Mech.	Total				
Graduates .....	.....	.....	.....	.....	.....	.....	4	.....	.....	4
Seniors	11	2	3	9	9	23	7	13	.....	54
Juniors	8	1	6	20	9	36	11	11	1	67
Sophomores	14	6	6	21	9	42	20	14	.....	90
Freshmen	10	.....	.....	.....	.....	65	55	20	.....	150
Irregular	3	.....	.....	.....	.....	3	6	2	.....	14
Total	46	9	15	50	27	169	103	60	1	379
Two-year	12	.....	.....	.....	.....	.....	.....	.....	.....	12
Grand Total	58	9	15	50	27	169	103	60	1	391

HOME RESIDENCE OF STUDENTS.

A. Resident outside of the State:

Connecticut:		Palmer.	1
Cromwell	1	Revere	1
Danielson	1	Roxbury	1
Derby	1	Seekonk.	3
Hartford	1	South Attleboro	1
Middletown	1	Swampscott	1
Naugatuck	1	Three Rivers	1
New London.	1	Whitman.	2
Plainfield	1	Willimansett	2
South Windsor	1		
Stonington	1		42
Waterbury	1	Illinois:	
		Oak Park	1
	11	Michigan:	
Massachusetts:		Palmyra	1
Brockton	6	New Hampshire:	
Brookline.	1	Laconia	1
Chatham.	1	New Jersey:	
Dedham.	1	Wood-Ridge	1
Fall River	9	New York:	
Foxboro	1	New York City.	1
Groveland	1	Hastings-on-Hudson	1
Haverhill.	1	Yonkers	1
Malden.	2		
Millville	1		3
New Bedford	1	Pennsylvania:	
North Attleboro	3	Palmerton	3
North Easton	1		

Total attendance from without the State. 63

B. Resident in Rhode Island by Counties and Towns:

Bristol County:		Central Falls	2
Barrington.	2	Cranston.	34
Bristol.	4	Cumberland.	3
Warren.	3	East Providence	9
		Glocester.	2
	9	Lincoln.	6
Kent County:		North Providence	4
Coventry.	1	Pawtucket.	19
East Greenwich	2	Providence.	129
Warwick.	8	Woonsocket.	15
West Warwick	8		

Newport County.		Washington County:	
Jamestown.	1	Charlestown.	2
Little Compton	6	Hopkinton.	1
Newport.	22	Narragansett.	1
Tiverton.	1	North Kingstown	4
	—	Richmond.	1
	30	South Kingstown	21
Providence County:		Westerly.	10
Burrillville.	8		—
			40
Total attendance from within the State.....			329

Entrance Statistics for Class Registering in 1922.

Total enrollment of class.....	150
Number received from high schools.....	130
Number re-classified and repeating work.....	8
Number received by examination	2
Number transferred from other colleges.....	10
Number credited with fifteen units or more.....	109
Number credited with fourteen and a half units.....	12
Number credited with fourteen units.....	9
	—
Total entering without condition.....	130
	79
Entering with condition of one-half unit, required work.....	22
Entering with condition of one unit, required work.....	26
Entering with condition of one and one-half units, required work..	1
Entering with condition of two units, required work.....	2
	—
Total with conditions	51
Average age of men and women, Oct. 1, 1922....	19 years, 0 months, 14 days
Age of youngest member of class, Oct. 1, 1922....	16 years, 6 months, 4 days
Age of oldest member of class, Oct. 1, 1922.....	34 years, 8 months, 20 days

Preparatory Schools Represented in Registration of Freshman Class.

In Rhode Island:		In Connecticut:	
Bristol—Colt Memorial	1	East Hartford High.....	1
Burrillville High	2	Stonington High	1
Central Falls High.....	3	West Hartford High.....	1
Cranston High	7		—
East Greenwich Academy.....	5		3
East Providence	6	In Maine:	
Newport—Rogers High	11	Cony High	1

North Kingstown High.....	1	In Massachusetts:	
Pawtucket High	4	Boston High	1
Providence:		Boston Stone High.....	1
Classical	6	Chicopee High	2
English	1	Drury High	1
Hope Street	5	Fall River:	
Technical	33	B. M. C. Durfee.....	3
LaSalle Academy	3	Sacred Heart Academy.....	2
Moses Brown	2	Malden High	1
St. Xavier	1	Mount Hermon	2
South Kingstown	1	North Attleboro	2
Warren.	1	Northfield.	1
Warwick.	2	Palmer.	1
Westerly.	6	Uxbridge.	1
West Warwick	3		—
Woonsocket.	1		18
	—	In New York:	
	105	Horace Mann School for Boys.	1
In Colorado:		In Pennsylvania:	
Pueblo High	1	Palmerton High	1
			—
			130

Financial Statement

Accompanying requests for funds from the General Assembly.

An itemized statement of receipts and expenditures for the year 1922 is herewith presented, together with an estimate itemized under identical headings for the year 1923. The estimate postulates a maintenance appropriation of \$108,000 for a twelve months' period, and on that scale the Board of Managers respectfully requests for the eleven months to December 1, 1923, a maintenance appropriation of \$99,000.

A study of the figures will show that for 1922 the necessary expenditures from the Morrill fund have been considerably over the amount estimated, caused by increased demands for instructional work and by increased cost of materials, expressage, railroad fares, etc. Consequently the amount carried over to the new year from

that fund is smaller by \$5412.76 than it was the year previous. Furthermore, the estimate for the new year carries a net increase over the expenditure of the previous year of \$3846, while careful consideration of the current fund resources seems to warrant the expectation of an increase of receipts to the amount of \$1200. It will be seen that these figures, taken together, make up the necessitated increase in the Maintenance fund (for twelve months) of \$8000.

The increase in the estimate lies entirely in the salary list. There is, therefore, herewith submitted a detailed classified statement showing the position of each official and the salary received. The fractions in parentheses indicate in each case the part of the official's time devoted to the work listed. Where no fraction is placed, the official devotes all his time to the work indicated. The total part time and whole time teaching force is equivalent to the full time work of $34 \frac{2}{3}$ teachers. Total of all employees is $46 \frac{1}{6}$. The number of students at the present time is 391.

As a sort of comparative guide, to indicate the moderate nature of the requests of this College, it may be permissible to point out that the Landgrant College at Storrs, Conn., a college of about the same size, had from the State last year a maintenance income of \$188,000, exclusive of sums going to the Experiment Station and Extension work, and that the State of New Hampshire gave to its Landgrant College at Durham the sum of \$275,000 for maintenance last year. These are mentioned, not because they are outstanding cases, but because they approach very closely to our own conditions and needs.

Maintenance.

TABLE 1. CLASSIFIED EXPENDITURES.

	1921	1922	Estimate 1923
1 Advertisements.	\$195.90	\$346.50	\$200.00
2 Apparatus.	2,613.99	2,351.29	2,200.00
3 Auto and stable	1,601.90	1,375.71	1,500.00
4 Books and periodicals	1,125.80	1,647.46	1,000.00
5 Commencement.	1,218.53	1,266.63	1,200.00
6 Construction and repairs	9,226.97	6,016.66	6,000.00
7 Electric current	1,576.82	2,088.27	2,500.00
8 Entertainment.	560.25	807.42	600.00
9 Feed.	4,109.01	4,628.97	4,600.00
10 Fertilizers.	643.91	730.95	700.00
11 Freight and express	718.49	1,287.93	1,300.00
12 Fuel.	17,212.34	18,820.96	19,000.00
13 Furniture and fixtures	825.11	1,021.97	850.00
14 Gasoline and oil	2,427.34	2,058.34	2,100.00
15 Janitors' supplies	358.56	536.47	500.00
16 Labor.	27,812.41	27,094.78	27,000.00
17 Laboratory supplies.	3,307.84	4,690.14	4,300.00
18 Lectures. . . . .	.....	1,047.23	1,000.00
19 Live stock	30.00	.....	.....
20 Postage and printing	3,512.23	3,578.47	3,500.00
21 Refunds.	1,019.81	1,177.41	1,000.00
22 Rentals.	3,651.04	3,628.18	3,640.00
23 Salaries.	97,457.88	102,177.53	108,000.00
24 Seeds.	334.19	652.15	500.00
25 Telephone and telegraph	830.81	1,258.05	850.00
26 Tools and machinery	397.47	382.57	400.00
27 Traveling.	2,553.44	3,175.62	3,000.00
28 Experiment Station . . . . .	.....	3,343.25	3,400.00
29 Miscellaneous.	2,808.68	2,803.66	3,000.00
	<hr/>	<hr/>	<hr/>
	\$188,130.72	\$199,994.57	\$203,840.00

RECEIPTS

	1921	1922	Estimated 1923
1 Morrill Fund, 1890—			
(a) Balance on hand Jan. 1.	\$16,753.09	\$25,040.73	\$19,587.24
(b) Received July 1, of which amount used to Dec. 31.	24,959.27	30,412.76	30,500.00
2 Morrill Fund, 1862.	2,500.00	2,500.00	2,500.00
3 State maintenance	100,000.00	100,000.00	108,000.00
4 Balance from current fund. . . . .	.....	51.43	63.19
5 Current receipts	43,969.79	42,053.85	43,200.00
	<hr/>	<hr/>	<hr/>
	\$188,182.15	\$200,058.77	\$203,850.43

Salary Schedule 1922 and (listed) 1923.

	1922	1923		1922	1923
<i>School of Agriculture.</i>			35 Prof. Psychology (1/6) ..	600	600
1 Dean, and Prof. Agronomy	\$3,500	\$3,500	36 Prof. Meth. Teach. (1/5) ..	700	1,000
2 Prof. Animal Husbandry ..	3,000	3,000			
3 Asst. Prof. Dairying	2,500	2,500		\$16,767	\$18,400
4 Instructor Poultry	2,067	2,200	<i>School of Home Economics.</i>		
5 Instructor Horticulture	2,000	2,000	37 Dean, Prof. Home Econ. ..	\$3,000	\$3,000
6 Instructor Agronomy	1,800	1,800	38 Instr. Home Economics ..	600	1,800
7 Instructor Greenhouse ...	667	2,000	39 Prof. Domestic Art	2,800	2,800
			40 Asst. Prof. Art (1/2)	1,150	1,150
	\$15,534	\$17,000			
<i>School of Engineering.</i>				\$7,550	\$8,750
8 Dean, Prof. Mech. Eng. ...	\$3,500	\$3,500	<i>School of Physical Training.</i>		
9 Prof. Civil Eng.	3,200	3,200	41 Director (5/7)	\$2,500	\$2,500
10 Prof. Electrical Eng.	3,000	3,000	42 Instr. Women (1/3)	800	800
11 Instr. Mechan. Eng.	2,100	2,100	43 Commandant (1/7)	500	500
12 Instr. Mechan. Eng.	2,000	2,000	44 Physician (1/5)	800	800
13 Instr. Industrial Eng.	834	2,500			
14 Instr. Shopwork	1,800	1,800		\$4,600	\$4,600
			<i>General Administration.</i>		
	\$16,434	\$18,100	45 President (18/25)	\$3,600	\$3,600
<i>School of Science.</i>			46 Registrar.	2,500	2,500
15 Prof. Biology	\$3,200	\$3,200	47 Treasurer (1/5)	600	600
16 Instr. Biology	1,566	1,500	48 Librarian (3/5)	1,579	1,150
17 Prof. Chemistry	3,200	3,200	49 Superintendent Buildings ..	2,100	2,100
18 Prof. Agr. Chem. (1/12) ..	334	334	50 Bursar	1,800	1,800
19 Prof. Industrial Chem.	3,000	3,000	51 Bookkeeper.	1,300	1,300
20 Instructor Chemistry	1,667	1,800	52 Clerk.	860	1,042
21 Instructor Chem. (2/7) ..	1,000	1,000	53 Clerk and Stenographer ...	1,020	1,090
22 Prof. Botany	3,000	3,000	54 Clerk and Stenographer ...	936	1,042
23 Instructor Botany	1,800	1,800	55 Clerk and Stenographer ...	874	936
24 Prof. Geology (1/7)	500	500	56 Farm Foreman	634	300
25 Prof. Bact. (9/20)	1,350	1,350	57 Publicity Agent	69	200
26 Instr. Bact. (1/6)	302	300			
27 Asst. Prof. Physics	2,500	2,500		\$17,872	\$17,662
			<i>Summary.</i>		
	\$23,419	\$23,484	School of Agriculture	\$15,534	\$17,000
<i>School of Humanities.</i>			School of Engineering	16,434	18,100
28 Prof. English Hist.	\$2,800	\$2,800	School of Science	23,419	23,484
29 Asst. Prof. Literature	2,500	2,500	School of Humanities	16,767	18,400
30 Instr. English	600	1,800	School of Home Economics ...	7,550	8,750
31 Prof. Modern Languages. .	2,867	3,000	School of Physical Training ..	4,600	4,600
32 Prof. Mathematics	3,000	3,000	Dept. General Administration	17,872	17,662
33 Asst. Prof. Mathematics ..	2,300	2,300			
34 Prof. Economics (7/25) ..	1,400	1,400		\$102,176	\$107,996

Request for Special Appropriation.

In addition to the request for the maintenance appropriation just explained, the Board of Managers requests an appropriation for special purposes to the amount of \$50,000. It will be recalled that last year special items were requested to the amount of \$58,500. Of this amount \$35,000 were granted. The present request is in part a renewal of the requests of the previous year not then granted, and partly the presentation of needs arising urgently in the current year. The table below summarizes the matter. Column I gives the original amounts asked for. Column II gives the actual expenditure under each head, and Column III shows the amount under each head composing the special request for the current year.

Items requested in 1922:

		Expended from amount granted 1922.	Requested for 1923.
1. To Exper. Station and investigational work:			
a. General Aid	\$3,500.00	\$3,500.00	\$3,800.00
b. Econ. and Marketing.....	3,500.00	2,500.00	4,700.00
2. Fire Protection	5,000.00	1,144.31	6,300.00
3. Equipment for Agricultural Building..	13,750.00	4,609.78	9,000.00
4. Major Repairs	13,650.00	9,412.28	4,200.00
5. Scientific Apparatus	15,400.00	10,083.60	9,500.00
6. Truck Repairs	2,200.00	3,100.00	3,200.00
7. Purchasing Live Stock	1,500.00	650.00	.....
8. Practice House .....	.....	.....	9,300.00
Totals. . .	\$58,500.00	\$34,999.97	\$50,000.00

Comment.

1. The first item consists of two parts; (a) is a request for \$3,800 to supplement the funds of the Experiment Station coming from the Federal Government for the purpose of enabling the station to prosecute without curtailment experiments now being carried on. Division (b) is a new enterprise undertaken at the request of farmers last year and involving investigations in marketing of foods and farm crops. On the grant of last year, a well equipped scientist was engaged and for the last five months has been at work on this investi-

gation. A preliminary report is now being printed as a Station bulletin. It is earnestly desired that this work be continued. It is also desired that it be permissible without further cost to have the investigator give one or more courses on Economics and Finance to students at the College and enlist their services in investigative work in connection with these courses. The \$4,700 asked for covers salary of investigator, traveling expenses, stenographer and office expense. The program is "To make a full and minute study of the facts concerning the machinery for distributing food products to the Rhode Island consumers, for the purpose of determining whether the machinery is too complicated and costly, whether it is adequate, whether it is easily susceptible to fraud; whether it involves unnecessary labor, expense, etc.

"And further, on the basis of the facts ascertained to make such suggestions of improvement or elimination as may seem economically practical.

"All this for the ultimate purpose of reducing the spread in money costs between the price received by the producer and the price paid by the consumer so as to permit of a fairer price to the producer without exacting an unfair price from the consumer."

2. As was stated last year, the fire risk at the College is large, and a fire survey by the engineering department of the What Cheer Mutual Fire Insurance Company recommended (see appendix to 1921 Report) a five-year program of \$6,000 per year. It was planned to spend \$6,000 during 1922, and negotiations to that end were carried on. At the last moment, however, it was found that the work could not be completed and paid for within the time for which the State funds were available (Dec. 31, 1922), and so the plans could not be carried out.

3. The furnishing of the Agricultural Building has gone on very slowly. Orders placed in June or July were not filled in December. The amount requested under this head is simply a renewal of the request of last year so far as pertains to the difference between the original estimate, \$13,750, and the part of the grant of 1922 used (\$4,600).

4. The amount requested for Major Repairs is also simply the amount necessary to carry out the original program of 1922, so far as the amount expended (\$9,400) did not cover it.

5. The original amount requested for Scientific Apparatus was \$15,400. The expenditures allowed amounted to \$10,000. The request now made covers not only the apparatus not purchased, amounting to \$5,400, but also an additional list for this year, earnestly desired by professors and amounting to \$4,100.00.

6. The original intent of the item for truck repairs was as stated—repairs. Toward the latter part of the year one of the two trucks (six years old) failed entirely, and it was judged necessary to buy an entirely new one. Hence the large excess over the estimate in this case. The new estimate for 1923 is to provide for the imminent failure of the second old truck, which is of the same age as the first practically.

7. On the purchase of live stock the College has been greatly aided by three gifts of fine young pure-bred stock of just the breeds desired. Hence the blank under this head.

8. The practice-house is an entirely new item called forth by the experience of the last two years. Its purpose is to afford opportunity to the student in Home Economics for practical experience in concrete household problems; including planning and executing daily work, controlling the finances, directing the dietary, handling the social life and learning the care of the child. The worth of the work has been demonstrated in many colleges, and the Smith-Hughes law requires such training. The house at present rented for this purpose is a mile from the College and is unsatisfactory in size and arrangement. No house suitable in plan and location is available. It is proposed to build on the college grounds a small practice-house, attractive in appearance, well planned and simply furnished, and adequate in size for the needs of an instructor, six or seven students at any one time, and a child.

It might be added that the housing problem at Kingston, both for students and especially for faculty members, is a very acute one. Through the initiative and enterprise of our students and of many of

our faculty members, we have been able so far to provide in large measure for immediate needs without asking the State to build dormitories or faculty houses. Nevertheless, houses are in great demand, members of our faculty being compelled at the present time to live in Wakefield and Providence. The building of a new practice-house of a proper kind and in the proper place on the College grounds would release to one faculty family now living in temporary quarters the house now rented as a practice-house, and in so far aid in the solution of an extremely perplexing difficulty.

EXPERIMENT STATION ESTIMATE FOR 1923.

(Exclusive of Fertilizer and Feeding Stuff Funds and not including Dr. Hall's salary and expenses.)

	1922	1923
Building and Land	\$721.36	\$720.00
Chemicals and Supplies	171.93	200.00
Feed.	1,768.68	1,800.00
Fertilizer.	1,506.23	1,500.00
Freight and Express.....	758.14	750.00
Furniture.	51.13	25.00
Heat, etc.	1,158.87	1,200.00
Labor.	10,053.16	9,900.00
Library.	561.82	500.00
Live Stock	16.15	50.00
Postage, Stationery	422.19	850.00
Publications.	2,224.91	1,750.00
Salaries.	19,758.70	22,263.17
Scientific Apparatus	138.36	150.00
Seeds, etc.	693.07	700.00
Tools, etc.	531.32	600.00
Travel.	305.18	300.00
Miscellaneous.	29.21	25.00
	<hr/>	<hr/>
	\$40,870.41	\$42,783.17

RECEIPTS.

United States Funds	\$30,000.00	\$30,000.00
Miscellaneous, Federal	5,013.50	5,000.00
Balance Previous Year	803.88 (Dr.)	642.51
College Maintenance	3,802.30	3,400.00
State Special	3,500.00	3,800.00
	<hr/>	<hr/>
	\$41,511.92	\$42,842.51

Student Societies.

One of the most interesting and encouraging developments in our college life has been the energy, initiative, and spirit of loyalty and sacrifice shown by our students in building houses for their organizations. In evaluating this movement it should not be forgotten that our students number among themselves none of the wealthy class, that many of them maintain themselves by their own exertions, and that their alumni, in the main themselves only a few short years out of college, can be called on for no large contributions of money.

Nevertheless, realizing the need here for housing accommodations, students organized into fraternities have not waited to importune the State to build for them modern dormitories, but have gone into their own pockets to build social homes for themselves. The amount of student property so owned up to the beginning of 1922 was approximately of a value of \$80,000. The loans on this property are steadily being paid off in installments year by year after an amortization plan. In no case since the beginning of the movement some twelve years ago, has any society failed to meet its yearly payment. This year, two new houses have been built, each costing \$20,000; the whole making a total valuation of \$120,000 in student houses at this College.

Each of the last two houses is interesting in a different way. The Lambda Chi Alpha house is built on a lot which the Fraternity bought. The lot adjoins the College grounds. This lot the Fraternity deeded outright to the College in order to be able to secure the endorsement of the College on the necessary loan with which to build the house. The other house, the Sigma Kappa house, is a sorority house, the first undertaken by a body of young women at the College. The students handle all the business of planning, financing, building, and managing these houses, under the oversight of the College Office and with brotherly (or sisterly) advice from one or more faculty members. Both the College and these organizations are under obligations to the Wakefield Trust Company and especially to its President, Hon. B. Frank Robinson, for intelligent interest and generous terms on which loans were made on notes indorsed by the college.

The Experiment Station.

Under a previous heading, reference has been made to the new work in economics undertaken by the Experiment Station. The annual report of the Director will be printed as a part of the Report of the Board of Managers.

Now and then there has appeared some indication of a fear that the work of the Station was not being adequately cared for by the College authorities. It may, therefore, be well to indicate definitely the financial support that the Station is receiving and from what sources it comes. To that end I have added under the head of Finances a statement for the Station similar in character to that for the College proper. It does not, however, include somewhat over \$5,000 coming from the State to the Station to pay for the control and inspection work on fertilizers and feeding stuffs. By reference to that heading it will be seen that the total income of the College proper is approximately \$200,000, while that of the Experiment Station, including some \$3,800 paid from the Maintenance fund of the College and excluding the expenses of the new economics work (amounting to \$2,500 from the special grant of the General Assembly), comes to \$41,511; or adding fertilizer and feeding stuffs receipts for 1922 (amounting to \$5,092) \$46,600. Now the amount paid by the State to the College and all its departments is rather closely determined. What goes to one division is rather sure to lessen the amount going to another division. The question of relative proportion, therefore, becomes prominent and has to be considered from all sides. The effort of the Board is to build up an educational institution, including both investigative and extension divisions, that will be symmetrical in its development, with no one part unduly fostered at the expense of others. The proportion of funds spent on investigation at this institution as compared with that spent on instruction and extension has been in the past very much in excess of any found elsewhere in the United States. That proportion has been reduced; not, however, by lessening the amount going to research work, but by increasing the amount obtained for the other two purposes. I feel sure that this policy is in accord with the actual needs of the State and is essentially sound in principle. Even now the proportion is considerably in excess of any elsewhere prevailing.

Even so, were there some definite work of investigation urgently needed by the agricultural interests of Rhode Island, or if any important investigation now being carried on were necessarily endangered by lack of funds, we should at once make every effort to secure such funds.

That this is true is evidenced by comparatively recent occurrences. Twice recently have come requests for immediate investigational work, once on a question of production methods in the market-gardeners' work, and once on marketing and distribution problems. In both cases on the initiative and under the direction of your Board and of myself as your executive, the necessary investigations have been set on foot and financed.

I have been at some pains to explain these matters in a public report in order that definite information might be at hand to clear up misapprehensions which I have cause to believe do exist.

The Extension Service.

The report of the Director will be printed as a part of the Report of the Board of Managers. It is necessary, merely, for me to note that while the County-Agent system is functioning in Southern Rhode Island and in Newport County, it is languishing in Providence and Bristol Counties. It is hoped that a movement now on foot to reorganize and strengthen the farm bureau organization of these two counties will be successful and will bring these counties up to the efficiency of the others.

The War Memorial.

Under the active and efficient leadership of the Alumni Advisory Board and the active co-operation of the Alumni organization itself, a fund of money adequate for the purpose had in view has been made available and a war memorial commemorative of our heroes in the Great War now stands on our campus. It consists of a grove of twenty-three trees set at the upper entrance to the campus, in the midst of which is placed a huge block of granite bearing a handsome bronze tablet on which are engraved the twenty-three names of our dead. In front of the boulder is placed a granite bench, the

gift of the Class of 1922. The whole constitutes a dignified and lasting memorial which will grow in beauty and significance as successive generations of students will daily pass it. It is a credit to the taste of Dean Adams, who planned and carried it out, and to the hearts of our Alumni who made it possible.

Athletics.

The outstanding feature of the year in athletics is the agreement on the conduct of athletics entered into by this College with four other Landgrant Colleges of New England,—Maine, New Hampshire, Massachusetts, and Connecticut. The main features of that agreement are that only students in good standing enrolled in a four-year course shall play on 'Varsity teams, and then only after they have passed the freshman year; that transfers from other colleges shall not play on such teams until they have passed a full year in residence, and that letter men among such transfers shall not play on them at all; and that all coaches shall be employed by the year and paid by the College alone for such work. Athletes may play for money during the summer under certain restrictions, but not during the College year.

Gifts to the College.

The College herd has been gradually improved until now it is a credit to the State both in its general excellence and in the remarkably fine record of some of its animals. This has been made possible only by the intelligent interest and generosity of our dairymen and their organizations. The Ayrshire men have been very helpful in various ways, and quite recently we have received as gifts three handsome Holstein animals, viz.—from Mr. A. W. Steere, of Greenville, R. I., one pure-bred Holstein heifer, from Mr. J. Ernest Singleton, of Wallum Lake, R. I., one pure-bred Holstein heifer, and from Mr. H. B. Ayres, 7128 Mead St., Pittsburg, Penna., one pure-bred Holstein bull. By resolution of your Board I convey to these gentlemen your thanks in behalf of the College.

Prizes and Scholarships.

The State Federation of Women's Clubs awarded a scholarship of \$50 to Ruth M. Abbott, '23, for 1921-22, and the same amount

to her for 1922-23. The Triangle Club of Kingston awarded a \$50 prize to Flossie E. Buxton, '24.

The State Grange has offered to the agricultural student obtaining the best scholarship record during the College year a prize of \$50, and to the student in the Home Economics Course obtaining the best scholarship record during the year the same amount.

The Lambda Beta chapter of Chi Omega Sorority, as an encouragement to women to give greater attention to public affairs, offered to the woman obtaining the best grade in the class in Economics a prize of \$25. This was won by Miss Emily M. Martin, '23, of Newport.

The Panheilenic Association, composed of the two sororities at the College, offered a handsome College Shield to the freshman girl making the highest average grade in studies at the end of the first semester. The shield was awarded to Miss Martha Sayles of Pascoag.

These evidences of interest in the work being done here are extremely helpful and encouraging, and are recorded with grateful recognition to the loyal hearts that prompted the gifts.

Changes in the Personnel of the College Staff.

The following severed their connection with the College: Dr. Emma G. Jaeck, Professor of Modern Languages, effective Sept. 1, 1922; Miss Gertrude Hughes, instructor in Zoology, effective at the same date; also E. A. Richmond, instructor in Botany; P. H. Wes-sels, for many years Associate Chemist in the Experiment Station, resigned, effective Oct. 1, to take an important position on Long Island; F. R. Pember, Associate, Glass-house Experiments, was stricken down with an attack of tuberculosis and was given a year's leave of absence; some three or four young men, chemists, were taken on successively in the Experiment Station and remained for short periods.

We greatly felt the loss of Mrs. Ida S. Harrington, who held the double position of State Supervisor of Home Economics in the public schools and State Leader in Home Demonstration Work in the Extension Service. Mrs. Harrington resigned in July and is now

holding an Extension position in New Jersey. Miss Mary E. Williams, Experiment Station Assistant in Animal Breeding and Pathology, resigned in July and later became Mrs. Harold W. Browning.

The following appointments were made for the year 1922-23:

Miss Winifred Hazen, B. S. of Oregon Agricultural College, was appointed as Instructor in Institutional Management in charge of Women's Residences at the College.

Henry B. Hall, Ph. D. of Harvard University, was appointed Investigator in Economics and Marketing, with the title subsequently fixed of State College Economist.

Albion N. Doe, B. S. Massachusetts Institute of Technology, of the University of Texas, was appointed as Assistant Professor of Engineering Extension.

Also, Frederic Bauer, B. S. of Connecticut Agricultural College, as Instructor in Zoology.

Also, George B. Viles, Ph. D. Cornell, of the University of Richmond, Va., as Professor of Modern Languages.

Also, Fred R. Clark, M. S. University of Michigan, Instructor in Botany.

Also, Ralph P. Tittsler, B. S. Penn. State College, Assistant in Bacteriology in the Experiment Station and Instructor in the same subject for the College.

Also, Carrick E. Wildon, B. S. Mass. Agl. College, Instructor in Horticulture.

Also, Miss Clara M. Taylor, B. S. Columbia University, Instructor in Home Economics.

Also, George W. Phillips, A. B. Princeton University, Instructor in English.

On the resignation of Mrs. Harrington her work was divided. Mrs. Hope Browne Minor was advanced from her previous position of District Home Demonstration Leader to that of State Leader, and Miss Jennie R. Bear, M. A. Columbia University, of the University of Delaware, was appointed by the State Vocational Board to the position of State Supervisor of Home Economics.

Commencement Exercises.

The exercises of the Baccalaureate Sunday, June 18, 1922, consisted of the Baccalaureate Address by the undersigned—an address preliminary to the dedication of the Memorial Grove and monument and entitled, *That These Dead May Not Have Died in Vain*—and the dedication itself conducted by the Alumni organization.

The main address of the Commencement day was given by Mr. Walter F. Angell of Providence, who delivered a very scholarly and interesting discourse on "Rhode Island's Influence in the Formation of American Democracy." The degree of B. S. was conferred on 54 candidates and that of B. Ed. on two, making a total graduating class of 56. The advanced degree of Electrical Engineer (E. E.) in course was conferred on Wesley C. Miller, (B. S. 1915).

The honorary degree of Doctor of Education was conferred on Walter E. Ranger, State Commissioner of Education, and that of Doctor of Science was conferred on Prof. Edward F. Miller, Chairman of the Faculty and Chief of the Department of Mechanical Engineering at the Mass. Inst. of Technology.

All of which is respectfully submitted.

HOWARD EDWARDS,

President.

REPORT OF THE TREASURER

R. S. BURLINGAME, TREASURER, *in account with the different funds of RHODE ISLAND STATE COLLEGE, for the year ending December 31, 1922.*

MORRILL FUND OF 1890 AND NELSON ACT OF 1907.

1922.

Jan. 1	To Balance on hand	\$25,040.73	
July 1	U. S. warrant for year ending June 30, 1923.....	50,000.00	
Dec. 31	By Instruction.	\$55,453.49	
	Balance on hand	19,587.24	
		<hr/>	<hr/>
		\$75,040.73	\$75,040.73

MORRILL FUND OF 1862.

1922.

Jan. 1	To Cash from Landscip Fund.....	\$2,500.00	
Dec. 31	By Instruction.	\$2,500.00	
		<hr/>	<hr/>
		\$2,500.00	\$2,500.00

SMITH-LEVER FUND OF 1914.

1922.

Jan. 19	To U. S. Warrant (second installment on \$11,510 for year ending June 30, 1922).....	\$5,755.00	
Aug. 31	U. S. Warrant (first installment on \$11,598.82 for year beginning July 1, 1922).....	5,799.41	
	Amount overdrawn	773.06	
Dec. 31	By Overdraft.	\$385.47	
	Apparatus.	2.50	
	Furniture and fixtures.....	398.77	
	Labor.	10.00	
	Library.	18.90	
	Postage, telephone and express.....	17.14	
	Publications.	396.82	
	Salaries.	9,296.56	
	Stationery and printing.....	358.33	
	Supplies.	29.65	
	Tools and machinery	39.10	
	Traveling.	1,371.23	
	Contingent expenses	3.00	
		<hr/>	<hr/>
		\$12,327.47	\$12,327.47

STATE—MAINTENANCE FUND.

1922.

Jan. 1	To State appropriation		\$100,000.00
Dec. 31	By Advertising in publications.....	\$14.00	
	Apparatus.	1,923.65	
	Auto and stable supplies.....	774.59	
	Books.	573.25	
	Chemicals.	47.20	
	Construction and repairs	5,236.83	
	Commencement.	641.02	
	Experiment Station—Aid	3,016.34	
	Feed.	4,039.15	
	Freight and express.....	9.31	
	Furniture.	799.10	
	Fuel.	16,728.46	
	Janitors' supplies	495.67	
	Labor (janitor, farm, etc.).....	19,864.53	
	Laboratory supplies	3,490.36	
	Lectures.	50.00	
	Oil and gasoline	1,793.11	
	Postage, stationery and printing.....	1,846.43	
	Rental of land	500.00	
	Salaries.	33,746.41	
	Seed.	589.27	
	Telephone and telegraph.....	1.85	
	Tools and machinery	351.91	
	Traveling.	1,292.20	
	Miscellaneous.	2,175.36	
		<hr/>	<hr/>
		\$100,000.00	\$100,000.00

STATE—REPAIRS AND IMPROVEMENT.

1922.

April 1	To State appropriation		\$35,000.00
Dec. 31	By Furnishings and equipment.....	\$4,609.78	
	Repairs and replacements	9,117.28	
	Scientific apparatus	10,083.60	
	Live stock	650.00	
	Truck and repairs	3,395.00	
	Fire protection	1,144.31	
	Experiment Station—Aid	6,000.00	
	Balance. . . . .	.03	
		<hr/>	<hr/>
		\$35,000.00	\$35,000.00

CURRENT FUND.

1922.

Jan. 1	To	Balance on hand	\$51.43	
		Reserve Fund	2,000.00	
		Department service	1,657.58	
		Department sales	13,608.86	
		Department fees	4,053.37	
		Dormitory fees	7,731.61	
		Laboratory sales	4,644.82	
		Tuition.	2,523.22	
		Interest.	1,260.23	
		Vocational Board	3,814.33	
		Miscellaneous.	2,759.83	
Dec. 31	By	Advertising in publications	\$332.50	
		Apparatus.	412.14	
		Auto and stable supplies.....	618.62	
		Books.	1,074.21	
		Commencement.	625.61	
		Construction and repairs.....	779.83	
		Electric current furnished	2,088.27	
		Entertainment.	807.42	
		Experiment Station—Aid.....	681.51	
		Feed.	589.82	
		Fertilizers.	713.75	
		Freight and express	1,278.05	
		Fuel.	2,092.50	
		Furniture.	222.87	
		Janitors' supplies	41.15	
		Labor (janitor, farm, etc.).....	1,916.96	
		Labor (student).....	5,277.77	
		Laboratory supplies	774.90	
		Lectures.	272.24	
		Oil and gasoline	265.23	
		Postage, stationery and printing.....	1,423.13	
		Refund.	1,097.75	
		Rental of dormitories.....	3,098.50	
		Rental of land	150.00	
		Salaries.	10,247.81	
		Seed.	62.88	
		Telephone and telegraph.....	1,256.20	
		Tools and machinery	30.66	
		Traveling.	1,780.30	
		Miscellaneous.	2,029.51	
		Reserve Fund	2,000.00	
		Balance on hand	63.19	
			<hr/>	
			\$44,105.28	\$44,105.28

TRUST FUND.

1922.

Jan.	1	To Balance on hand	\$16,224.21	
		Boarding receipts	75,204.13	
		Dairy—Advanced registry	3,062.70	
		Store receipts	9,611.30	
Dec.	31	By Boarding.	\$82,860.19	
		Dairy—Advanced registry	3,058.04	
		Store.	7,581.60	
		Balance on hand	10,602.51	
			<hr/>	<hr/>
			\$104,102.34	\$104,102.34

HATCH FUND—EXPERIMENT STATION.

1922.

Jan.	1	To United States check for quarter.....	\$3,750.00	
April	1	United States check for quarter.....	3,750.00	
July	1	United States check for quarter.....	3,750.00	
Oct.	1	United States check for quarter.....	3,750.00	
		Amount overdrawn	452.68	
Dec.	31	By Overdraft.	\$291.14	
		Building and land	135.75	
		Chemical supplies	4.60	
		Feeding stuffs	262.34	
		Fertilizers.	319.82	
		Freight and express	333.61	
		Furniture.	14.40	
		Heat, light, water and power.....	64.93	
		Labor.	4,394.19	
		Library.	392.07	
		Postage and stationery	176.68	
		Publications.	1,911.91	
		Salaries.	6,325.98	
		Scientific apparatus	1.60	
		Seed, plants and supplies.....	406.08	
		Tools and machinery.....	175.70	
		Traveling.	241.88	
			<hr/>	<hr/>
			\$15,452.68	\$15,452.68

ADAMS FUND—EXPERIMENT STATION.

1922.

Jan.	1	To United States check for quarter.....	\$3,750.00	
April	1	United States check for quarter.....	3,750.00	
July	1	United States check for quarter.....	3,750.00	
Oct.	1	United States check for quarter.....	3,750.00	
		Amount overdrawn	1,223.09	
Dec.	31	By Overdraft.	\$697.99	
		Building and land	425.17	
		Chemical supplies	136.34	
		Feeding stuffs	1,102.99	
		Freight and express	27.74	
		Heat, light, water and power.....	477.87	
		Labor.	3,211.55	
		Library.	26.70	
		Postage and stationery.....	13.34	
		Salaries.	9,944.36	
		Seeds, plants and supplies.....	79.96	
		Tools and machinery	40.93	
		Scientific apparatus	35.90	
		Traveling.	2.25	
			<hr/>	
			\$16,223.09	\$16,223.09

MISCELLANEOUS FUND—EXPERIMENT STATION.

1922.

Jan.	1	To Balance on hand	\$185.25	
		Department sales	4,773.97	
		Department service	171.92	
		Interest.	67.61	
Dec.	31	By Building and land	\$13.08	
		Feeding stuffs	108.13	
		Fertilizers.	1,168.91	
		Freight and express	356.81	
		Heat, light water and power.....	68.92	
		Labor.	659.12	
		Library.	23.20	
		Live stock	1.25	
		Postage and stationery.....	7.43	
		Publications.	5.50	

Salaries.	75.00	
Seeds, plants and supplies.....	78.80	
Tools and machinery.....	261.42	
Scientific apparatus	35.86	
Contingent expenses	17.21	
Balance on hand	2,318.11	
	<hr/>	<hr/>
	\$5,198.75	\$5,198.75

STATE FEEDING STUFF INSPECTION—EXPERIMENT STATION.

1922.

Jan. 1	To State appropriation		\$1,300.00
Dec. 31	By Chemical supplies	\$102.52	
	Freight and express.....	18.74	
	Heat, light, water and power.....	122.98	
	Labor.	842.59	
	Postage and stationery.....	8.10	
	Publications.	105.00	
	Seeds, plants and supplies.....	6.50	
	Traveling.	88.10	
	Contingent expenses	5.00	
	Balance on hand . . . . .	.47	
		<hr/>	<hr/>
		\$1,300.00	\$1,300.00

STATE FERTILIZER CONTROL—EXPERIMENT STATION.

1922.

Jan. 1	To Fertilizer fees		\$3,792.00
Dec. 31	By Chemical supplies	\$261.53	
	Freight and express.....	29.98	
	Heat, light, water and power.....	218.79	
	Labor.	3,013.09	
	Postage and stationery.....	9.13	
	Publications.	100.90	
	Seeds.	29.66	
	Scientific apparatus	7.66	
	Tools and machinery	3.18	
	Traveling.	113.00	
	Contingent expenses	5.00	
	Balance on hand . . . . .	.08	
		<hr/>	<hr/>
		\$3,792.00	\$3,792.00

EXPERIMENT STATION—AID.

(Included in Current and State Maintenance Funds.)

1922.

Dec. 31	By Feeding stuffs	\$43.03
	Freight and express.....	24.57
	Furniture and fixtures.....	66.75
	Heat, light, water and power.....	156.75
	Labor.	322.80
	Postage and stationery.....	80.48
	Publications.	12.18
	Salaries.	2,901.26
	Seeds, plants and supplies.....	6.55
	Tools and machinery.....	25.35
	Traveling.	54.79
	Contingent expenses	3.34
		<hr/>
		\$3,697.85

EXPERIMENT STATION—SPECIAL.

(Included in State Repairs and Improvements Fund.)

1922.

Dec. 31	By Building and land.....	\$140.16
	Chemical supplies	30.99
	Feeding stuffs	295.22
	Fertilizers.	17.50
	Freight and express.....	39.41
	Furniture and fixtures.....	36.73
	Heat, light, water and power.....	250.10
	Labor.	1,556.22
	Library.	119.85
	Live stock	14.90
	Postage and stationery.....	170.44
	Publications.	307.50
	Salaries.	2,116.27
	Seeds, plants and supplies.....	128.23
	Tools and machinery	643.27
	Traveling.	121.21
	Contingent expenses	12.00
		<hr/>
		\$6,000.00

SUMMARY, EXCLUSIVE OF EXPERIMENT STATION.

Total income, including balances:

United States—1890	\$75,040.73
United States—1862	2,500.00
United States—1914	11,554.41
	<hr/>
	\$89,095.14

State:

Maintenance.	\$100,000.00
Repairs and improvements.	35,000.00
	<hr/> \$135,000.00

Institution:

Current.	\$44,105.28
Trust.	104,102.34
	<hr/> \$148,207.62
	<hr/> \$372,302.76

Total expenditures:

United States—1890	\$55,453.28
United States—1862	2,500.00
United States—1914	12,327.47
	<hr/> \$70,280.96

State:

Maintenance.	\$100,000.00
Repairs and improvements.	34,999.97
	<hr/> \$134,999.97

Institution:

Current.	\$44,042.09
Trust.	93,499.83
	<hr/> \$137,541.92
	<hr/> \$342,822.85

Balance on hand \$29,479.91

Balance held as follows:

Morrill Fund—1890	\$19,587.24
Current Fund	63.19
Trust Fund	10,602.51
Repairs and improvements . . . . .	.03
Smith-Lever deficit	773.06
	<hr/> \$29,479.91

I hereby certify that the above is correct and true, and truly represents the details of expenditures for the period and by the institution named.

R. S. BURLINGAME,

Treasurer.

This is to certify that we, the undersigned, auditing committee of the Board of Managers of Rhode Island State College, have examined the accounts of R. S. Burlingame, Treasurer of the said college, and find the same correct.

THOMAS G. MATHEWSON,

CHARLES ESTES,

Auditors.

THIRTY-FIFTH ANNUAL REPORT OF THE DIRECTOR OF THE AGRICULTURAL EXPERIMENT STATION*

PRESIDENT HOWARD EDWARDS,
Rhode Island State College.

DEAR SIR:—

I hereby submit brief statements of such experimental results obtained during 1922 as will serve to indicate the nature of most of the more important lines of work.

In such a report of progress it should be understood clearly that present ideas regarding some of the results are liable to modification in the future as the researches continue. Nevertheless, it seems desirable to transmit annually, in a paragraph, the impressions derived from each project, even if some readers do attach too much importance to certain indications.

Publications.

The effect of limes containing magnesium and calcium upon the chemical composition of the soil and upon plant behavior. *In Soil Science*, 1922, v. 13, no. 5, p. 337-355.

The hydrogen-ion concentration of soils as affected by drying. *In Science*, 1922, v. 55, no. 1433, p. 647-648.

Thirty-fourth annual report of the station. *In Bul. of Rhode Island State College*, v. 7, no. 5, p. 29-41.

The substitution of stable manure by fertilizers, green manures, and peat. *Bul. 188*, March, 1922, 24 p.

Killing, staining and mounting parasitic nematodes. *In Trans. Amer. Micros. Society*, 1922, v. 41, no. 2, p. 103-105.

The reaction of soils in the field as influenced by the long-continued use of fertilizer chemicals. *Bul. 189*, April, 1922, 35 p.

Inspection of commercial feeds. Annual feed circular. April, 1922, 12 p.

Inspection of fertilizers. Annual fertilizer circular. October, 1922, 12 p.

The feeding power of certain cereals, and their response to fertilizer ingredients. *Bul. 190*, November, 1922, 28 p.

*Contribution 297. *In Bulletin of Rhode Island State College*, Vol. XVIII, February, 1923.

Weather.

Detailed weather records may be found in the Climatological Data, New England Section, of the U. S. Department of Agriculture Weather Bureau. In April, May and June, the temperature was above normal. On April 29 the temperature fell below freezing, and even as late as May 28 and as early in autumn as September 26 there were light frosts in the lowlands. On October 19 it was so cold that boarded celery froze.

June was not only the warmest June since 1899, but the precipitation was much above normal. August broke our record of the month for a third of a century with 10.99 inches of rain, more than twice the normal. In September the total rainfall was only 1.46 inches, or 1.81 inches below normal.

Spray Versus Dust for Potato Blight.

The weather was very conducive to late blight and rot, and the Bordeaux spray caused a two-thirds increase in the yield of sound potatoes of the Rural group. Where Bordeaux dust was applied with a hand duster in comparison with the usual spraying with a horse sprayer, the crop of sound potatoes was only about 70 per cent as great with the dusting as with the spraying. The same proportions of the same lots of mono-hydrated copper sulfate and calcium arsenate (1:1.25) were used in both cases at the same time. The potatoes were treated on five dates with Bordeaux including the arsenate, and subsequently on two dates without it.

Organic Matter for the Soil.

The four winter legumes which were sown in the sweet corn on July 12, 1921, wintered in the following decreasing condition: vetch, sweet clover, red clover and alfalfa; half of the latter was winter-killed. Irish Cobbler potatoes planted April 13, 1922, with a low nitrogen fertilizer yielded from 156 bushels where the alfalfa was turned in, to the maximum of 195 bushels on the red clover. For a number of years, when no manure and low nitrogen fertilizers have been used, the plat where red clover is the green manure has yielded as well as, or better than, any of the other plats.

Based on the average of the last three years, where corn is grown

continually with complete fertilizer, 20 pounds of nitrogen per acre each year, with a legume cover crop plowed in, resulted in 61 bushels of corn; 60 pounds of nitrogen, with a rye cover crop plowed in, resulted in 52 bushels, and with no cover crop, 43 bushels.

When supplied with plenty of fertilizer, early cabbages following late celery of the previous year in the market garden rotations have given about the same yields regardless of whether, during the rotation, organic matter has been supplied in stable manure, peat, or green manures. The crops of early tomatoes and late celery, however, have not yielded as well with the peat and green manures as with the stable manure. Early lettuce and late beets and spinach have never succeeded on the peat plat, even when accompanied with more lime and fertilizer than have been used with stable manure.

Green manure crops planted broadcast during the latter half of July, to find out which will produce the largest amount of water-free material above ground, have yielded the following as an average of four years:

Dry matter per acre. Tons.		Dry matter per acre. Tons.	
Japanese millet	2.26	Sunflower	1.55
Pearl millet	1.95	Buckwheat.	1.52
Corn.	1.63	Sudan grass	1.50
Barley.	1.56	Cowpea.	1.05

Planted about the middle of July each year for green manure, mammoth clover, cow-horn turnips and soybeans are plowed under in the autumn and their effect on both early lettuce and beets compared with that of mammoth clover, rye and timothy turned under in the spring.

In case of the following three-year rotation: 1, beets before cauliflower; 2, spinach before carrots; 3, eggplant, as large crops were produced with 16 tons of manure and fertilizer chemicals as with 32 tons of manure and fertilizer chemicals. In a modification of this rotation, ryegrass and clover are grown for green manure in place of cauliflower to see if the manure can be successfully reduced still further.

Where only fertilizer chemicals are used in competition with 10 cords of manure each year, for vegetable growing, about a sixth more late cabbages were grown with the fertilizer. Only the stubble of a good winter cover crop of clovers was turned in with the manure, whereas the entire green manure crop was plowed in where the fertilizer chemicals were used.

Buckwheat was grown in pots during different periods and to different stages of maturity, including full growth. It was turned into the soil so that the different harvests had reached different degrees of decay when cos lettuce was planted at the same time in all pots. With ample lime and repeated applications of fertilizer the crop of lettuce was satisfactory and practically equal in all cases, even where a full grown crop of buckwheat was turned in just prior to planting the lettuce.

In the cylinders where different nitrogen carriers are used, late corn grew about the same whether there was or was not a green-manure rye crop turned in before planting.

Efficiency of Fertilizers and Other Manures.

Such water-insoluble nitrogen of the fertilizers sold in the state as supplied an appreciable part of the guaranty and appeared to be of inferior quality by laboratory tests, was used in an attempt to grow millet in pots. This crop showed that in the case of a few brands, which are named in the Annual Fertilizer Circular, the insoluble nitrogen was of poor average quality. Such attention to the quality of the material in the fertilizers sold in the state constitutes a very valuable part of the inspection in Rhode Island and is a potent factor in diverting inferior material elsewhere.

About two tons of fifth-year mixed hay were produced with nitrate of soda, but less with sulfate of ammonia and with cyanamid, even though wood ashes were used in the top-dressing each year to regulate acid soil conditions.

Where more lime is used with sulfate of ammonia than with nitrate of soda, as is necessary if acidity is reduced to the same amount, fully as much mixed redtop and legume hay was produced with the sulfate as with the nitrate. This was true even with the alfalfa which constituted the second and third cuttings.

On the more acid plats of the Phosphat eExperiment (pH about 5.7) with deficiency only of phosphorus, miscellaneous crops showed as usual that the better carriers of phosphorus were acid phosphate, Thomas slag phosphate and ground bone. In general, the double or triple superphosphate was usually somewhat inferior to these. Floats, or undissolved phosphate rock, was plowed in with a clover aftermath in the autumn of 1921 for comparison with the above more available carriers applied the following spring. Four times as much phosphorus in floats as was applied in the better carriers gave generally lighter yields, and it required nine times as much in floats to equal or exceed the yields from the better carriers.

Where the different commercial potash salts are used in such a way that not only a limited amount of potassium, but the associated elements also, have an opportunity to exert an influence, the kainit gave the best yields, probably because of its sodium. The magnesium-potassium sulfate was not inferior to the sulfate and muriate as it usually has been.

As usual, on the early crops, 1500 pounds of a 4-10-2 fertilizer was a decidedly better supplement to 16 tons of horse manure than was an additional 16 tons of manure instead of fertilizer. A larger amount of nitrogen in the fertilizer, however, was as usual profitable with the early cabbages, but not with the early tomatoes and lettuce. A larger amount of phosphorus was highly beneficial only to the lettuce. There was no advantage from a larger amount of potassium. For the second crops of this rotation, the equivalent of about 1000 pounds of a 5-7-6 fertilizer was used to supplement the spring applications of manure and fertilizer chemicals. No advantage was gained by using an extra amount of any ingredient on celery. The season was too short for the late beets and spinach. Bulletin 188 published in March contains six years' results with this rotation.

Silage corn in a three-year rotation, preceded by oat and pea hay and rutabagas and followed by mixed hay, has averaged in 1916, 1919 and 1922, 10 per cent less with about 4 cords of cow manure when planer shavings instead of straw were used for bedding. Muriate of potash when added with the "shavings manure" has increased the average yield about a tenth, but acid phosphate has not been a needed supplement for the corn, although very much required by the preceding crops of rutabagas.

Plant Differences and Needs.

Yellow-colored soybeans, only sufficiently early to mature their seed when left in the field, were again compared to determine their merits primarily for silage purposes. Promising varieties are Austin, Haberlandt, Mongol and Swan. The yields have averaged about 9 tons. A sufficient proportion of soybean vines is not obtained when planted in the drill with silage corn. An equal area of the two silage crops planted separately, however, may be used in a mixed silage to reduce materially the purchase of protein concentrates.

By planting Leaming silage corn so that the plants stand not less than about six inches apart in the drill, pole beans planted in the same drill have produced a satisfactory mixture for the silo. Of those tried, the White Runner variety has yielded the largest proportion, but it has been more inclined to form a tangle between the rows than has the Horticultural variety, and, furthermore, the latter has more market possibilities as a bean for shelling.

The Green Mountain potato, which was the chief variety grown on the rotations, yielded a total of about 400 bushels. Under the same conditions the Russet Rural and Rural New-Yorker yielded around 300 bushels; Snowflake, Early Ohio and Early Harvest, around 200 bushels; whereas White Albino, White Rose, Netted Gem and Sir Walter Raleigh yielded only 103 to 128 bushels.

Seventeen crosses of potatoes supplied by the U. S. Department of Agriculture yielded from 84 to 329 bushels in comparison with 438 bushels of Green Mountains from New Brunswick, Canada.

In a comparison of spinach varieties, Savoy-leaved and Giant Thick-leaf were earlier than Long Standing and Victoria. The first one of each pair yielded somewhat more than the other one.

From the same number of cabbage plants set out May 10 the following yields were obtained:

	July 10.		July 22.		Lbs. per head.
	Heads.	Lbs.	Heads	Lbs.	
Copenhagen.	36	97	52	158	2.9
Charleston Wakefield	15	28	42	103	2.3
Jersey Wakefield . . . . .	..	..	..	...	1.7

From lettuce seed planted April 14, Big Boston and Improved Salamander made no heads, Wayahead and All Heart only small ones, Black-seeded Tennis Ball large hard ones, and Iceberg good but late heads.

The non-clover, second-year hay, in rotations without manure, was grown in 1922 on plats which have two amounts of each fertilizer element applied in order to determine the fertilizer needs of the crop. One plat from which only nitrogen has been omitted for at least a quarter of a century has averaged only 1.40 tons in 1912, 1917 and 1922, the last three rounds of the rotation including corn and potatoes; whereas by increasing only the nitrogen the yield has averaged 4 tons. Concerning the other fertilizer ingredients, the use of 50 as compared with 100 pounds per acre in 1922 did not depress the yield in case of phosphoric oxid in acid phosphate; but did in the case of potassium oxid, even though 300 pounds of common salt were used; this was also true of the first-year hay of the preceding year. The foregoing indicates that for hay in such a long-continued, non-manure rotation, the potassium oxid may eventually need to be as high as the phosphoric oxid.

With limited amounts of the fertilizer ingredients, both in solution and in soil, barley and wheat yielded less than oats in the greenhouse. The same was true in the field as shown in Bulletin 190, which includes results also with rye, buckwheat and millet.

In the spring of 1920, a plat was seeded to oats, summer vetch and clover for comparison with another which differed only in having 10 pounds of alfalfa and 5 pounds of orchard grass seed per acre added to the seed mixture. During 1920 and 1921 about a sixth more hay was harvested from the plat without the alfalfa and orchard grass, but in 1923 the clover plat of course had run out, whereas the plat which had orchard grass and alfalfa yielded 3.2 tons of hay in the two cuttings, about a third of which was alfalfa. This is a demonstration of one way to get a more or less continuous crop of hay with a legume admixture.

Home-grown, annual white sweet clover or Hubam seed in the hull was broadcasted in April. Plenty of plants resulted and only a single cutting, on July 24, was obtained, which yielded 1.8 tons of hay.

In 1922 the asparagus was cut before the fertilizer was applied, so the yield was influenced by no later fertilizer application than that of 1921, which was uniform and liberal for nitrogen and phosphorus, but varied on different plats up to 50 pounds of potassium oxid and 300 pounds of sodium oxid, in chlorids and carbonates. With an equal degree of soil acidity, the chlorids yielded more than the carbonates. With insufficient potassium, both sodium salts were useful up to the maximum amount. After the harvest the maximum sodium oxid was increased 500 pounds per acre.

In the greenhouse, further attempts to grow lettuce without manure resulted in about half as valuable a crop as with manure compost, until the extremely high application of about 15 tons of acid phosphate and 4 tons of additional limestone per acre was made when maximum yields were obtained. Similar extreme treatment with these materials reduced the "active" aluminum to very little, about a third of an otherwise comparable section on which lettuce made a very poor growth. The manure compost also contained very little active aluminum. The following crop of cucumbers was as large with only a little leached manure as with the usual manure, even where no excessive phosphate and limestone applications were made. It is desired to find a non-manure medium in which normal growth results when and only if a complete fertilizer is added, in order that the nutrient requirements may be ascertained by the analysis of the crops receiving certain near-optimum applications.

Similar work in another room of the green house includes two or three crops of radishes and spinach in the fall and winter, followed by tomatoes. With a mixture of soil, sand, commercial humus and fertilizer chemicals, the yields of radishes and spinach were about the same as with manure compost, and the yield of the following crop of tomatoes was not very much more with the compost.

Six crops were planted at the same time where potassium was the only deficiency, and again where phosphorus was the only deficiency, for comparison with the same crops when planted where there was

liberal fertilization. The approximate dry matter in pounds per acre of the edible portions was as follows:

	From a soil deficient in phosphorus.	Increase where phosphorus was added.	From a soil deficient in potassium.	Increase where potassium was added.
Carrots.	5,000	600	3,700	1,900
Corn.	6,800	1,300	1,200	6,900
Mangels.	400	7,100	2,000	5,500
Oats.	4,000	1,800	4,900	900
Onions.	2,200	800	100	2,900
Potatoes.	1,200	600	400	1,400

The yields at harvest where there was liberal fertilization were about as follows: carrots, 750 bushels; corn, 84 bushels; stover, 2.50 tons; mangels, 25 tons; oats, 37 bushels; straw, 3.30 tons; onions, 400 bushels; and potatoes, 200 bushels. These results of only one year are brought together to emphasize the great difference in feeding power of the crops both for phosphorus and for potassium (columns 1 and 3) and also the difference in gain when the deficiencies are supplied (columns 2 and 4). When averages of a sufficient number of years have been obtained, fertilizer analyses for different crops may be based on the averages. Considering the present results simply to gain a point of view, mangels as compared to the other crops needed fertilizer with the highest phosphorus, not only because mangels exhibited the lowest feeding power for this element, but because the dry matter gain resulting from the use of phosphorus was greatest. Mangels responded markedly also to potassium.

Of the above crops, only mangels and onions yielded more on the series of phosphate plats which has received the most lime, and are nearly neutral, than on the series which is much more acid. On the nearly neutral soil, the foliage of most of the crops was chlorotic as has been observed frequently. Injection of chlorotic corn with a great variety of iron-containing solutions of different reactions failed to give positive results.

When grown under identical conditions, buckwheat and pumpkin continued to give low response to lime as a neutralizer; summer vetch also, by this single test, appears to be in this group, and perhaps rape belongs here instead of in the medium group. Parsnips showed

a medium rather than a high response. Onions and leek exhibited in a marked degree their usual high response to liming.

In co-operation with the U. S. Bureau of Plant Industry, eight special strains of timothy were planted in September, 1921, both in drills and broadcast, in comparison with commercial seed. General notes were taken regarding maturity, rust and lodging. At least a second year's yield seems desirable before making a statement regarding the relative characteristics of the strains.

Rosen and common rye drilled in the preceding autumn were compared. On May 1 the common rye was well headed out, whereas the heads of the Rosen rye were barely showing. The Rosen was plainly more leafy than the other and attracted the attention of those interested in green manuring. Although the Rosen yielded somewhat more grain, the difference in the amount and proportion of straw in the two varieties was the most striking, the Rosen rye yielding 3.5 tons and the common rye 2.5 tons of straw.

Effect of Crops on Each Other.

The past season was the second successive one in which the sixteen miscellaneous crops were grown prior to a single crop which it is planned to grow next year. The following crops have been grown uniformly over the entire area in the past: onions, buckwheat, alsike clover and mangels.

Late cabbages following four different first crops grown in the same season under conditions intended to be suitable have given the following yields as a five-year average:

	Late cabbage heads. Tons per acre.
Planted after spinach.	8.88
Planted after beets.	8.84
Planted after potatoes.	8.55
Planted after peas.	7.80

In Bulletin 190, published during the year, it is shown that six cereals grown in 1920 exhibited the following effects on the same cereals grown in 1921, namely: each cereal grew somewhat better

following wheat, barley and oats than following rye, and also following buckwheat instead of millet. The influence of the preceding crops was manifested most markedly in case of buckwheat, the growth of which was very much depressed where millet was the preceding crop.

Modification of Sour Soils.

In the autumn of 1921, another application of the different kinds of lime was made, equivalent to 1725 pounds of calcium oxid per acre. In the following July it was found that the hydrated calcic and magnesian limes had maintained the soil in a neutral condition, whereas with the corresponding limestones the soil was slightly acid. Of a number of crops planted it is of interest to notice that those with low lime requirement, buckwheat, for example, were either not benefitted or were slightly injured by the liming, in which case, as would be expected, the best growth was with the less active limestones instead of with the slaked or hydrated limes.

In connection with numerous plats of lawn or putting-green grasses receiving various top-dressings, acid-soil conditions have been maintained by about 250 pounds each of sulfate of ammonia, acid phosphate and muriate of potash per acre, and such troublesome weeds as plaintain, dandelion, chickweed and crabgrass entirely eliminated from competition with Rhode Island bent and certain fescues.

With the small phosphatic applications of the Phosphate Experiment, crops again grew less well in general where the lime had been used rather abundantly, especially in recent years, than where only a little had been added. There were still evidences of chlorosis on the area which had been limed most, even though no new application of lime had been made and slight acidity had developed.

The type of soil from the experimental plats, which in the past had been so treated as to have wide differences in the degree of soil acidity, was used in pots to grow crops sensitive to the various conditions. The alumina soluble in half-normal acetic acid varied from about 150 p.p.m. to 800 p.p.m. of dry soil, and the subsequent growth of lettuce decreased with the increase in alumina. Lettuce grew normally on the most acid soil only when the alumina was reduced

to about 300 p.p.m., by extreme applications of both hydrated lime and acid phosphate.

In Bulletin 189, published during the year, the cumulative effect of long-time treatments on soil acidity may be found. Sulfate of ammonia had greatly increased soil acidity as compared with other nitrogen carriers. None of the phosphorus carriers, not even acid phosphate, had increased the acidity. Neither had the potassium carriers. Leguminous green manure cover crops had increased the acidity, but non-legumes had not.

Food Marketing.

Research on this problem has not been emphasized prior to the appointment of the economist who began work in July. Facts are needed concerning the great problem of supplying food to the people of the state. Largely because of the hearty co-operation of associations whose purpose enables them to recognize the importance of the work, marked progress has been made already concerning wholesalers' costs and prices, of which the latter are compiled and available each day, and to a lesser extent, regarding the retailers' service. The willingness of a large proportion of farmers to reply to questionnaires has made it possible to gain a fair conception of what it is necessary to investigate before the farmers' marketing costs, in distinction from his producing costs, are realized.

Inheritance Studies with Poultry.

Due to the difficulty in rearing young stock in the White Plymouth Rocks for a long time for lighter and heavier eggs, further breeding work with that stock will have to be discontinued. Even the crosses of the selected stock with normal stock produce offspring that are lacking in vitality.

An analysis of the results obtained in the cross between Cornish and Hamburgs shows that the offspring develop much faster than do the Hamburgs and equally as fast as the Cornish. They also attain at ten months approximately the weight of the Cornish at that age. The second generation cross behaves very much like the first generation cross.

Studies in Diseases of Poultry.

An attempt on new ground to rear turkeys free from blackhead was partly successful. The poults were kept on the experimental ground until November 1 and suffered only a small loss from blackhead up to that time. Controls reared under ordinary conditions all died of blackhead very early. In rearing the experimental poults both brooders and hens were used with nearly equal success.

The laboratory work in the study of a typical bacteria from poultry disease has been completed, and the results are prepared for publication. Of the eight organisms studied, one is related to the hog cholera group, one to *Bact. gallinarum*, one to *Bact. cloacae*, two to *Bact. coli*, two to *Bact. aerogenes*, and one to the paracoli group.

In the study of white diarrhea of chicks biochemical and serological studies have failed so far to give any grouping of the bacteria found in this disease. All of the cultures give fairly uniform reactions. A flock of pullets and cockerels consisting originally of one hundred birds has been tested repeatedly by the serological test for white diarrhea. The results show a great variation in the behavior of the serum at different times in the development of the individual bird. Practically no difference has thus far been found in the number of reactors among pullets and cockerels.

Considerable time has been devoted to the study of paralysis in adult fowls. Thus far, however, no cause or remedy has been found.

Respectfully submitted,

BURT L. HARTWELL,

Director.

Kingston, R. I.

R. I. STATE COLLEGE 1922.

APPENDIX A.

Summaries Dealing with Certain Phases of Receipts and Expenditures for the Year Ending June 30, 1922.

SUMMARY FOR YEAR.

Balance on hand July 1, 1921.....	\$62,123.09
Total income during year.....	363,760.32
Total.	\$425,883.41
Total expenditures during year.....	337,086.00
Balance on hand July 1, 1922.....	\$88,797.41

INCOME.

Income from students:

Tuition fees	\$2,469.72
Matriculation and incidental fees.....	3,895.38
Chemicals and laboratory supplies.....	4,009.79
Dormitory fees	7,593.14
Dining halls	75,817.34
Store sales	8,940.70
	<hr/> \$102,726.07

Income from State and Nation:

State—Maintenance appropriation	\$100,000.00
Repairs and improvements.....	35,000.00
	<hr/> \$135,000.00

Federal—Morrill Act of 1890 and Nelson Act of

1907.	\$50,000.00
Morrill Act of 1862.....	2,500.00
Hatch Act of 1887—Experiment Station	15,000.00
Adams Act of 1906—Experiment Station	15,000.00
Smith-Lever Act of 1914—Extension...	11,510.00
	<hr/> \$94,010.00

Income from other sources:

Department sales and service.....	\$25,186.81
Interest.	1,341.72

Experiment Station:

Department sales and service.....	\$5,436.19
Interest.	59.53
	<hr/>
	\$5,495.72

\$32,024.25

Total income	\$363,760.32
Receipts from tuition	\$2,469.72
Students taking course of one year or more.....	401
Students paying tuition (non-resident in Rhode Island) at rate of \$50 per year.....	57

EXPENDITURES.

Expenditures, exclusive of Experiment Station and Extension Service:

Advanced herd registry.....	\$3,446.03
Advertising in publications	304.20
Apparatus.	3,317.73
Auto and stable supplies.....	1,218.07
Boarding.	75,665.83
Books and periodicals	1,316.68
Commencement.	874.23
Construction and repairs	8,535.50
Construction and repairs, special.....	20,078.88
Dormitory and land rental.....	3,675.50
Electric current furnished outside college.....	1,810.06
Entertainment.	790.41
Experiment Station—Aid	1,377.47
Feed.	3,896.24
Fertilizers.	713.75
Freight and express	925.70
Fuel.	8,810.25
Furniture.	706.08
Gasoline and oil	2,211.34
Janitors' supplies	362.19
Labor (engineers, poultrymen, farm, etc.).....	20,882.46
Labor (undergraduate, exclusive of boarding)...	5,193.12
Laboratory supplies	3,311.32
Postage, stationery and printing.....	1,976.03
Refunds.	1,098.75
Salaries.	98,432.89
Seeds and plants	471.91

Store.	9,055.68	
Telephone and telegraph	1,077.71	
Tools and machinery	379.49	
Traveling.	2,207.05	
Miscellaneous.	4,042.42	
	<hr/>	\$288,164.97
Expenditures, Experiment Station		35,892.83
Expenditures, Extension Service		13,028.20
		<hr/>
Total expenditures		\$337,086.00

SUMMARY OF BALANCE, JULY 1.

	1921	1922
Morrill Fund of 1890. . . . .	.....	.....
Morrill Fund of 1862. . . . .	.....	.....
Smith-Lever Fund, Extension Service. . . . .	.....	.....
Hatch Fund, Experiment Station. . . . .	.....	.....
Adams Fund, Experiment Station. . . . .	.....	.....
State—Maintenance.	\$31,607.68	\$41,790.86
State—Repairs and improvements . . . . .	.....	29,234.34
State—Building	14,313.22	.....
Current Fund	4,678.88	7,476.06
Trust Fund	9,076.00	8,245.95
Miscellaneous, Experiment Station	447.31	50.20
Reserve Fund	2,000.00	2,000.00
	<hr/>	<hr/>
	\$62,123.09	\$88,797.41